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THE ETIOLOGY OF TYPHOID FEVER.

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It is now generally believed, that enteric fever is the result of a specific poison acting upon a person especially susceptible to its influence. This conclusion has been forced upon the profession by the peculiar train of symptoms, the constant pathological changes, and certain antecedent conditions of exposure to infection. Although this belief of a specific cause is so firmly fixed in the medical mind, there is still no unanimity of opinion as to its origin and nature. Pettenkofer traces a mysterious connection between the amount of rain-fall and epidemics of this disease. Murchison has concluded that putrescent fecal matter engenders it. Some accuse decaying vegetation as the offender, while others argue, that the poison is the product of intestines specifically diseased. Since there is such a difference of opinion as to its origin, the views as to the essential nature of the poison must be correspondingly vague. It is undetermined, whether it is an inorganic salt, or organic compound; a malarial gas, or a germ. In such an unsettled state of belief, although attention may be wearied, no harm can be done by a re-statement of views already well known. We shall therefore attempt to give the conditions under which the disease arises, and from these conditions, argue as to the nature of the specific poison.

These conditions of the disease naturally arrange themselves under two heads: 1st, The state of the individual, and 2d, His external surroundings.

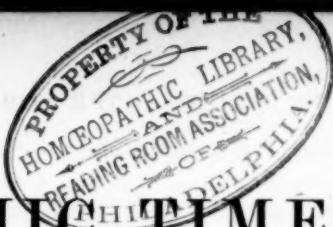
No age is entirely exempt, although the disease attacks by preference those who are in the

most vigorous period of life, viz., from fifteen to forty. Nor can any one, however robust, be sure of escaping it. Pregnant and nursing women, persons suffering from disease of the heart, carcinoma, phthisis, and other acute and chronic diseases, are all liable to its invasion, although in a measure, strangely protected by their peculiar disease.* While a previous attack does not entirely remove the susceptibility, yet a second invasion has been found to be rare. All persons exposed to the conditions which produce the disease, do not contract it; and there seem to be certain states of the constitution which render one invulnerable to the shafts of the poison. In all of the above particulars, typhoid fever bears a striking resemblance to all contagious diseases of which we have knowledge. It is not so wide-spread in its action, nor so certain of its aim as is the virus of small-pox or scarlatina. This fact only shows, that its virus is less easy of dissemination than those of the other contagious diseases, and does not militate, in any degree, against the theory of a specific cause.

In considering the external surroundings which predispose to the production of this fever, climate must first claim our attention. According to Niemeyer,† "it occurs far north in Russia and Denmark, in middle Europe, especially in Germany, France and the Netherlands; and even in the South, in Italy, Syria and Turkey, it is not rare." In England and the United States, it does not confine itself to the seaboard or the interior, and is found at all heights above the level of the sea. It also occurs at all seasons of the year; but is most prevalent in autumn. It is not confined to large cities. In fact, it has been found to be more prevalent in country

* Niemeyer: *Text Book of Practical Medicine*. Vol. ii, p. 576.

† Loc. cit.



towns, and it is not uncommon to find it in isolated farm-houses. From these facts, it must be inferred, that invariable climatic conditions are not necessary for the generation of its peculiar poisons; that frost cannot nip out its vitality, nor the long continued heat of a summer sun dry up the juices of its life. We cannot as yet say of it, as we do of the malarial fevers, that below a certain temperature it cannot exist. Although its limits of temperature are not yet determined, still analogy bids us to believe that there *must* be a temperature which is most favorable to its production, or maintenance. This probably is that of the autumn, since it is at this time most prevalent. But there are many sources of fallacy in this reasoning. For it may have been developed during the hotter months of the summer; or the greater humidity, and the other unknown climatic conditions of the fall, may have engendered it; or the susceptibility of the system to the action of the poison may be greater during the autumnal months. Only this can be safely asserted: That unknown conditions of heat, and a certain amount of moisture are necessary for the continuation of its existence, if it be only the product of diseased intestines, or for the generation of the poison, if it can arise *de novo*.

We now proceed to the immediate external conditions, which precede the sporadic and epidemic invasions of the disease. It is nowhere denied that the cause of the disease must be organic, if not organized; that it must be derived from persons stricken with the disease, or from decomposing animal or vegetable matter. In regard to its genesis from decomposing vegetable matter, the case is by no means proven. Although exceptional instances of its apparent origin from this source are cited upon good authority, the agency of vegetation alone is open to grave doubt. Ponds that have become low, festered and stunk beneath a steady summer sun, have undoubtedly given origin to the disease. But, in no case of which we are aware, has it ever been shown, that they were free from contamination by animal excrement. Every pond, in inhabited communities, must contain the drainage of many a privy and dung heap; and because the inhabitants, who live near its border, have sickened and died of a typhoid fever, it by no means follows, that decomposing vegetable matter was the offending cause. It is interest-

ing to note, in this connection, the fact narrated by Dr. Alonzo Clark, that typhoid fever is not the disease of new communities; that as the malarial fevers take their departure, typhoid fever comes in to fill their place. This can be explained by supposing that malaria protects against the typhoid poison; but an explanation more in harmony with the facts will suggest that the comparative isolation, scattered population, and a soil and water courses as yet uncontaminated with the refuse of civilized life, have furnished the real protectives. However this may be, vegetation has decayed for years, where there have been no cases of malarial disease, and yet no typhoid fever has arisen. Again, enteric and intermittent fevers do exist side by side. Malaria cannot therefore be the protecting agency. So long then as there are cited only exceptional cases of a supposed vegetable origin, which can be reasonably explained by other demonstrable causes, and since the ratio of the totality of the cases of this disease to the immense quantity of vegetable matter continually decaying is so infinitesimally small, we are justified in stating, that the theory of vegetable fermentation is inadequate to account for any attack of enteric fever.

Through the researches of numerous keen-scented investigators, decomposing faecal matter has been incontestably proven to develop the specific *materies morbi* of this fever. This is becoming so universally accepted by the profession, that it is scarcely necessary to cite cases in support of it. Still it may be of interest to illustrate this point by an instance or two.

In 1869, a large school was invaded by typhoid fever, attacking nineteen pupils in succession. Dr. Allbut was called upon to ascertain the cause. He found by chemical analysis, that the well-water was contaminated with sewage matter. In close proximity to the well, was a soft water tank, whose cement was shelling off on the side next to the well. "That soaking was going on from the tank into the well, was evident from the distinct discoloration of the stone-work of the well contiguous to the tank, and in no other part." The vault of the tank was cracked in two places and above its arched roof, the whole ground was saturated with filth from a broken water closet pipe. The first persons attacked were two boys, who had joined the school in January, and had

been there but nine days. Their dejecta had been thrown into this water closet; the contents of the privy had passed into the soft water tank through the cracks in its walls, then percolated from the tank into the well. It is but reasonable to infer, that, the succeeding invasion of March, was due to the final passage of fæcal matter, of some unusual character, into the stomachs of the nineteen pupils at that time attacked.* It will be unnecessary to cite similar cases; for the number of them is almost legion. Dr. A. Clark states that in Bellevue Hospital, typhoid fever is almost invariably traced to a foul water closet. The authorities of every country agree, that the products of decomposing fæcal matter are the originating causes of this disease.

But then now arises a question upon which the authorities are not agreed. Can healthy fæces, undergoing decomposition, spontaneously originate the typhoid fever poison? Epidemic and sporadic cases, happening in isolated communities, where no attacks of the fever have ever been known, or where there have been none for a lapse of many years, with no traceable source of contagion from anything whatever except foul cesspools, privies and water, would seem at first thought to answer unhesitatingly in the affirmative. But when we remember, that the same can be said of small-pox and scarlatina, we are compelled to hesitate in our reply; for no one now believes in the spontaneous origin of these diseases. A further element of doubt is added when we reflect that, in these same communities, the water has been drawn from the same wells, and that fæces and filth have rotted for many years together; and yet no case of the fever has occurred. Into whatever rural districts one may go, he will find undisinfected privies near contaminated wells; and still there is no fever there. In the filthiest and most noisomè portions of crowded cities, abdominal typhus is by far the exception, and not the rule. In the summer of 1858-59, the Thames River, which receives the excrements of two millions people, "seethed and fermented under a burning sun" with such a horrible stench, that the Courts in Westminster were broken up by the abominable odor. Parliamentary committees sat behind window-blinds saturated with chloride of lime, and the river steamers lost their traffic. "Yet no epi-

demic came, and the death-rate for those seasons was below the average."* It is apparent, therefore, that the number of cases, where decomposing animal matter engenders the fever, is but a fractional percentage of the number where it does not. We can explain this, by supposing unknown atmospheric and "telluric" influences. We can also explain it by supposing unknown stellar influences, acting "calalytically" upon the fermenting mass:

"For just where fails the comprehension,
A word steps promptly in as deputy."

But if we make use of the theory that "like genders like," it is not necessary to introduce a mysterious cause, acting in a mysterious way. The diagnosis of typhoid fever is not always made out, even by the best physicians. Granting the certainty of diagnosis of all the physicians of a town, and that the most intelligent and painstaking efforts have been made to trace the disease to preceding cases, there yet remain many means, by which the source of contagion can escape the vigilance of the keenest-eyed medical detective. After every probability of its being introduced by persons who have the disease has been eliminated, there still remain the packages, the letters, the newspapers which have passed through how many hands, and have been in what unknown places. Granting the impossibility of these being the media of introduction—although they are proven to be the carriers of other contagions and are so commonly dropped into human excreta, we have still the wind, which, if it can transport volcanic ashes seven hundred miles, can surely waft the seeds of disease from regions beyond a physician's ken. The vitality of the typhoid poison, which endures all climates and temperatures, admits of such a probability. To claim that enteric fever must spontaneously originate, because we cannot always trace its immediate source, is as absurd as to suppose the spontaneous evolution from the coral dust of the stately cocoa palm which grows upon the lonely reef, in the waters of the Pacific. Considering, then, the many circumstances which may conceal the links in the chain which stretches between each successive case of this fever,—notwithstanding the weighty and deliberate opinion of Dr. Murchison,—we must conclude with Drs. Budd and Watson, that filth

* *British Med. Jour.* March 26th, 1870, p. 308.

* Watson's "Practice of Physic," Hartshorne, 1872, Vol. ii. p. 846.

is rather the "nurse," and not the *parent* of the specific poison of typhoid fever. Fæcal matter conveys and fosters, but cannot, of itself, generate the poison.

From the case reported by Dr. Allbut, heretofore recited, it would appear, that the fæces of patients with the fever are particularly objectionable. So many cases of a similar nature are reported, that the evidence becomes too overwhelming to admit of a doubt. From a report of Drs. Wood and Allbut,* I abstract the following facts. The source of water for a school, was derived, 1st, from a well, 2d, from a watering trough in the village. The well water was found, on chemical analysis, to be comparatively free from organic matter, containing but 1.82 grs. to the gallon. The water from the trough, although very bright and palatable, contained 5.04 grs. to the gallon, with the addition of nitric acid, itself a product of decaying animal matter. The area of fever in the village was curiously conterminous with the area supplied by the trough, only one case having occurred outside this area, and that one in a boy, who frequently drank of its water. The source of the water in the trough was traced to a pool, located behind some cottages, built upon the site of a stone quarry, which had been filled up with loose porous earth-rubble. The stream ran through this filled-up basin by several underground channels. This stream must have received the drainage of these cottages; for the soil was observed to drink up eagerly the rain as it fell, and the rocky bottom of the quarry could allow of no percolation through it. No case of typhoid fever had occurred, previous to the return of a girl Lee, from a neighboring village, although the products of fæcal decomposition must have passed into the stream, which supplied the watering trough for many months or years preceding. This girl Lee fell sick with the fever soon after her return. Her dejections were cast into the privies behind the cottages, "for the first two days, and were afterwards buried in the porous soil." Soon afterward the epidemic broke out wherever this water was used, and *only* where it was used. We have here an indirect passage from a diseased ileum into healthy stomachs, and typhoid fever resulting. There can be but one conclusion from this case illustrative of many similar ones, which might be related. The

characteristic lesion of the disease is the engorgement and subsequent ulceration of Peyer's Patches. The characteristic symptom is the passage from the rectum of the products of this ulceration in a peculiar alkaline, thin, and non-mucous discharge. Portions of this discharge find their way into water. This water is drunk by persons who have not otherwise been exposed to the disease. They also become sick with the same disease. The use of the suspected water is stopped, when the epidemic stops also. The stools are disinfected and the progress of the destroyer is stayed. The evidence of the inoculation of small-pox is not more conclusive than this.

The communicability of typhoid fever, other than by the stools, is by no means clearly established. Niemeyer says,* that infection of the nurses and physicians is rarely seen in abdominal typhus. Dr. Murchison states, that during fourteen and one-half years' experience in the London Fever Hospital, only 8 cases, out of 2,506 patients treated, originated in the hospital itself. Dr. Clark gives as his experience, that in well-ventilated chambers, there is little danger of contracting the fever. From the important part which the stools play in this tragedy of disease, and the slight communicability of the disorder, it is not probable that the contagium is eliminated by other organs than the intestines. We are not aware that the *kidneys* are suspected of excreting contagious matter in any of the infectious diseases; and the lesions of these organs in this disorder do not differ from those observed in other febrile diseases. Still it is barely possible that the poison may be eliminated by them. In the lungs and respiratory tract we find no changes characteristic of this disease. That the specific *materies morbi* passes out with the breath seems improbable from the healthiness of the air of the sick-room, as compared with that in the other contagious disorders, especially typhus. The *sputa* may possibly contain it. The eruption on the *skin* is neither constant nor abundant when it does occur. There is rarely pustulation, as in variola, or desquamation, as in morbilli or scarlatina.† If at all, the pestilential matter must pass off from the cutis, as a gas or a vapor. Although the air under the bed-clothes is far more dangerous to

*Brit. Med. Jour. March 26, 1870, p. 308.

*Op. cit., p. 575.

†Niemeyer, loc., cit.

breathe than the atmosphere of the room, yet this may be due either (1) to the exhalations from the soiled linen, or (2) to gas from the bowels. Finally, the experience of Dr. Budd, hereafter to be related, is convincing proof that the disinfection of the dejecta insures the safety of the attendants, and establishes decidedly the innocence of other organs than the intestines in the excretion of the infecting material.

The various *carriers* of the contagion have been partially mentioned in the cases previously narrated. *Water* has been demonstrated to be one of the principal channels by which it finds its way into the body. The agency of milk has recently become notorious. The following history not only illustrates the guilt of milk, but shows how putrifying animal refuse may be circumstantially convicted of generating the disease, when, in reality, the specific poison can be traced to an apparently innocent offender. In Brierly Lane, England, the soil had been irrigated with liquid brought from the yard of a knacker, or, a "man who cuts up worn-out horses for dog meat." As a result, the most abominable stench filled the air. An epidemic of enteric fever breaking out at the same time in the houses adjoining the irrigated land, was naturally attributed to the stinking refuse. Upon close investigation, it was found that the first case had occurred in a dairy somewhat remote from the hamlet. Whilst the dairyman was ill with the fever he was nursed by his wife, who, at the same time, milked the cows, and in every detail attended to the care and sale of the milk. The wife in turn falling sick, was nursed by the convalescent husband, who then performed the duties attendant upon the dairy. We have thus many ways by which the milk could have been specifically polluted. "Now the hamlet consists of 87 houses, and the occupants of 38 of these procured milk from this dairy. Of these 38, enteric fever had prevailed in 23, or in 60.5 per cent. of the whole; whereas, of the remaining 49 houses not having this milk supply, 11 only, or 22.4 per cent were attacked. In these 11 houses there had been ample time for the general poisoning of the atmosphere through drains, etc."* No comment is necessary. Since clothing is liable to be soiled by the diarrhæal discharge, it is not surprising that it should convey the poi-

son. Dr. Geo. Shin reports a case where a household, having no social intercourse or connection by privy, drain or well with another family, upon washing the clothing of this infected family, was in consequence attacked by the scourge.*

The *atmosphere*, also, must be a vehicle for the infecting material. Van Gritt relates, that a villager at Ulin, having contracted typhoid fever, returned home. His excrements were thrown upon a dunghill. Several weeks later five persons were employed to remove this dunghill. Of these five, four were attacked with typhoid fever, and the remaining one with gastric symptoms and swelling of the spleen. Their excrements were buried deeply in this same dunghill. Nine months later, two persons completely removed the manure, one of whom was attacked by the fever.† From a letter of Dr. Budd to Prof. Tyndall, I take the following:—In the parish of St. James, Bristol, Dr. Budd writes, that he saw within a small area more than 80 cases of the disease; and "yet all the patients, with the exception of a single household, were drinking the same water which more than 150,000 of their fellow-citizens outside the infected area were drinking with absolute impunity." During a later epidemic, "an outbreak of the fever occurred in a large convent, about two miles from Bristol. The fever was confined to the reformatory division, which occupied the central block of the building. The fever was brought by a girl, who had contracted the disease twenty miles distant, and at the date of Dr. Budd's first visit, more than fifty girls were lying ill of it. Now the facts as to the drinking water were these: 1st. The water was proved by examination of the well and by chemical analysis to be entirely pure from sewage contamination. 2d. The inmates of another large division of the convent who remained entirely free from fever drank the same water as the girls among whom the fever was raging like a plague. 3d. From the very time when disinfection was brought to bear upon the excreta the disease ceased to spread, although the inmates of the infected division continued to drink the same water as before. Lastly, nothing has since been done to the well; the water remains what it was, but no fever has

* *Edin. Med. Jour.*, Jan., 1865, p. 599.

† *Liebermeister, Ziemssen's Cyclop. of Med.*, vol. i, p. 56.

* *Allbut, London Practitioner*, Nov., 1874, p. 382, et seq.

occurred in the convent since. The evidence is of that crucial, decisive order that admits of no reply."

Water being excluded, "the air is the only possible vehicle by which a poison, generated in a living body, can find its way back to other living bodies, on a scale sufficiently large to cause the resulting disease to assume an epidemic form."*

We are now prepared with the necessary facts to consider the probable nature of this something which so fatally deranges the human organism.

In our discussions heretofore, we have used the words virus, materies morbi, poison, etc., as etymologically synonymous, not intending thereby to express any opinion as to the essential nature of the cause of typhoid fever. They have been employed merely to indicate the baneful influence which some specific substance from without has inflicted upon the various functions of the body.

Enough has been said to prove the *organic origin* of this substance. No inorganic substance known to toxicology, resulting from vegetable or animal decay, produces such a sequence of symptoms. We hence conclude, that *the substance itself must be organic*.

If organic, it may be either a gas, liquid or solid. It must also be either organized, or unorganized.

That it is a *gas*, seems improbable,

1st. From its non-elimination from the gas excreting organs of the body ;

2d. From the persistence with which it clings to the fæces, and

3d. From its introduction into the body, principally through the media of drinking water and food.

Although the air has been proven to convey the contagion, it by no means follows that the infection in it is a gas, which finds its way into the blood along with the oxygen, by osmosis through the delicate endovesicular membrane.

According to Tyndall, the atmosphere is so full of floating motes, that the diffused blueness of the sky is produced by innumerable, infinitesimal particles, metallic, vegetable and animal. Since nearly every particle, suspended in the inspired air, is entangled by nature's filter, before it can reach the air cell, the passage of insoluble particles into the circulation must take place, (if

at all,) through the mucous membrane of the respiratory tract. But we are not confined to the lungs, as the absorbing agents of substances suspended in the atmosphere. Solid particles settle upon our food, and into our drinks; or, having been drawn into the mouth, they attach themselves to its lining membrane, and are finally carried through the oesophagus into the stomach and intestines, exactly the place where the action of the typhoid poison is most marked, and first manifested.

If the contagion be a *gas soluble in water*, it is difficult to understand why infected water should spare those who have lived in its neighborhood, but have not drunk of it, for it is the property of every gas to diffuse into the atmosphere, however soluble in water it may be. Nor is it plausible to suppose, that a gas can be rolled up in a bundle of linen, and carried to a distant washer-woman. We, therefore, feel warranted in excluding the gaseous nature of the poison.

There is no direct evidence to show that the specific cause of the fever is a *liquid*, or a *solid dissolved in a liquid*. At first sight, such a supposition might not seem to be inconsistent with the facts. But in order to be either of these, it must be unorganized, and subject to the same laws as other organized poisons. Although we speak of organized fluids, such fluids never exist in a natural state outside of a more or less complexly organized body. It would be a manifest misapplication of terms, to speak of fluid fæces, or the urine, as organized liquids. Of course, no organized body can be dissolved in a liquid, without destruction of its organization. The decision of this question must turn upon the organization, or non-organization of this so-called poison.

Every known poison, whether mineral or vegetable, gas, liquid or solid, has an effect upon the body proportionate to the dose; that is, the larger the dose, the more prompt and vigorous its action. In addition, the effect is an immediate one. As soon as the poison has been absorbed, it begins its merciless and fatal onslaught. It does not lurk insidiously in the body, lulling its victim into fancied security for hours and days; but, with inexorable promptness, makes known its deadly purpose. Nor does it "wax strong and multiply" while within, but remains forever the same exact quantity as when taken into the system, if it be not destroyed. We would as soon expect a stone to procreate its kind, or a

*Fragments of Science. Tyndall, Art. on "Dust and Disease."

grain of sugar to beget a whole field of cane, as a poison to reproduce its like while within the human body.

The contrast between the specific cause of enteric fever and any known unorganized poison, is striking and complete. They agree alone in this: they are both introduced into the body from without, and are both deleterious to the healthy action of the functions. Here the analogy ceases abruptly and decisively. In typhoid fever, we have a so-called poison, innocent or harmful, according to certain ill-understood conditions of the individual, absorbed into the system in infinitesimal quantities, with no determinate relation between the amount taken and the violence of the symptoms produced, working for days before its victim becomes aware of its presence, and, finally, inexplicably propagating itself and multiplying a thousand incalculable fold. Surely, if it is unorganized, it is unorganized after a wonderful manner.

Since it is not, then, what we ordinarily understand by the word poison, what name should be given it? Some would prefer to call it a ferment; others, a germ. The term, *ferment*, does not seem to be sufficiently restrictive; since, as ordinarily employed, it refers to any substance, which, when mingled with another substance, awakens in it the process of fermentation. In the fermentation, for instance, the decomposing albuminous matter, which is added to the saccharine solution, is denominated the ferment. But albuminous matter is not in reality the determining agent of the process, any more than the soil or the air are the determining agents of the growth of an acorn to an oak, or the secretions and blood of the mother the guiding cause of the development of a fœtus. If you keep mingled albuminous matter and sugar entirely free from the spores of a certain fungus, they may remain indefinitely together, and there will be no carbonic dioxide and alcohol evolved. In other words, according to Prof. Chandler, fermentation has been proven to be a vital process of growth, in which sugar and albumen constitute the food of a plant, and carbonic dioxide and alcohol its excrements. The word ferment, therefore, includes both the food and its eater. *Since the "typhoid poison" reproduces its kind, and not the substances on which it feeds, it does not seem correct to call it a ferment. Since it differs from any unorganized substance which is known, it is*

probably organized; and, since it is organized, and has the power of reproduction, in the strictest etymological sense, it must be a germ.

Having reasoned that the cause of enteric fever must be germinal in its nature, let us see whether this theory is in harmony with the facts.

I. *Individual selection.* The constitutional predisposition, necessary for the nurture of the germ, can be accounted for by supposing the alimentary canal to be in an atonic condition, whose catarrhal mucus and undigested contents may serve as a nidus for the growth of the germs, and whose weak, distended capillaries may allow them or their effete products to pass into the vessels and peyerian glands. The protective states of the system are as easily explained upon the germ hypothesis, as upon any other.

II. *The distribution of the disease.* The wide distribution of the disease, in all climates and at all seasons of the year, is consistent with the astonishing vitality of numerous other germs, whose habits of life are known.

III. *Its probable non-production by decaying vegetation.* The non-development of a peculiar germ by decaying vegetable matter, is in harmony with our knowledge of the natural selection of soil by every parasitic and non-parasitic growth.

IV. *Its nurture by fecal matter.* That germs should thrive in fœces, which contain the elements of food necessary for infusorial or fungous life, is to be reasonably believed.

V. *Its propagation from typhoid stools.* From fœces of enteric fever patients, we should expect to proceed the germs which induce the fever in others, and furnish the "ferment" for healthy dejecta.

VI. *Its non de novo origin.* Germs cannot arise *de novo*, unless we are prepared to admit the truth of the theory of spontaneous generation.

VII. *Its destruction by disinfectants.* The substances which destroy the vitality of other germs, are found to be equally efficacious in destroying the infecting properties of typhoid stools.

VIII. *Its passage through soil.* Those who know the impossibility of filtering water free from suspended impurities, will not doubt the probability of these germs percolating with water through porous soil.

IX. *Its conveyance by clothing, etc.* Being particles, they ought to adhere, as do other germs, to milk pails, soiled clothing, etc.

X. *Its conveyance by air.* If the "germs of infusoria, which breed in liquids, * * * rise in swarms into the air, * * * the germs in liquid excreta" should do the same, by virtue of the same physical law.

XI. *Its effects in no proportion to the quantity absorbed.* Like no other poison, (strictly speaking,) an infinitesimal quantity introduced from without, works an enormously unproportional mischief, and multiplies inculcably.

XII. *Its period of incubation.* The number of days which elapse before any effects are manifested, can be explained, by the occupation of the time in the breeding of the innumerable progeny, so characteristic of the spores of fungi, bacteria, micrococci, and other forms of infusorial life.

XIII. *Its invariable causation of the same disease.* As from elephants never come mice, and from puff balls, pine trees, so from typhoid fever contagium should come typhoid fever contagium, and never any other contagium whatsoever.

We believe, then, that all the facts, so far as known, are explained, and do not, in any way, contradict the essentially germinal nature of the "poison." What may be the essential nature of this germ, whether fungous, spore or infusorial sperm cell, it is utterly useless to speculate. Although Klein claims to have isolated and seen this baleful seed, his researches are not sufficiently matured to enable us to decide upon the truth of his supposed discovery. Only the habitat, and mode of conveyance of, the germ, can safely be asserted to be known. It comes from the human intestine; but, whether it will multiply if transported immediately from the typhoid stools into the healthy stomach, or, whether it must pass through a further stage of development before it can grow and fructify in the human body, is not ascertained. Liebermeister says, "It travels from the diseased individual to the localities which are favorable to its growth, and from these localities again into the human body."

There are one or two objections to the theory which we have espoused, which may demand a cursory notice. If it is a germ, why has not the microscope revealed it? To this it may be answered, first, that the number of skillful microscopists who have investigated the subject with thoroughness, are exceedingly few; second, that

the identification of minute particles is a work of exceeding difficulty; and third, that the germs may be ultra-microscopic. The investigations of Pasteur, into the causes of the silk-worm disease, called pebrine, is a sufficient illustration of the above propositions. For years, microscopists had been at work without results. Pasteur, with a genuine scientific habit of mind, and an unsurpassed ingenuity of research, at last brought down the shrugged shoulders of scientific France, by an absolute demonstration, that the disease was due to the passage of germs from the body of one silk-worm into that of another; and that, while at one period the "corpuscular poison" was seen to crowd every tissue of the creature, there was another period when nothing whatever could be detected by the microscope. Again, Prof. Tyndall has shown that both air and water are filled with organic particles, which defy the microscope, but become luminous in the intense light of the electric beam. Like the astronomer, who vainly thinks that his vision has pierced to the farthest nebulae in the "utterly deepest bottom" of the blackness of the night, in his pride of knowledge, the microscopist forgets that there are regions which must lie forever beyond his eye.

We can answer but one more objection to the germ theory. It is asked, why is not the absorption of the germs immediately followed by symptoms, if the presence of germs is so disturbing to the healthy action of the functions? This in reality we are not able to explain, any more than the opponents of the germ theory can tell us, why their mysterious gases, pythogenic and septic matters are so long in developing their symptoms. But it is probably not the presence of the germs, but their feeding, their growth, their excretions and their elimination, which so derange the animal economy. Which of these it is, or more properly may be, it would be idle to speculate. To a hypothetical objection, a hypothetical reply only can be given.

The germ theory of typhoid fever can be said to rest upon a sound hypothetical basis. While the facts of occurrence, spread and production of this disease are neither accurately nor exhaustively known, yet so far as they are known, no other theory has fewer objections, and so fully and harmoniously accounts for all the facts. The crucial evidence is still wanting; the discovery and description of the germ itself. The theory

* Ziemssen, *Cyclop. Med.*, Vol. I, p. 52.

should only, then, be accepted as provisionally true; as a working hypothesis, which would seem to furnish a more solid foundation for the discovery of the cause of a disease, which mercilessly ravages the most vigorous and useful of mankind. Next to the knowledge of a fact, is the supposition which leads to its detection. And since the old hypothesis of "malaria," and "poison," and "septic matter," and other ignorance hiding theories, have been incompetent to discover the cause of not only enteric fever, but of every other contagious and miasmatic disease, it is better that the mind of the profession should be turned in a new direction, which shall demand the most patient, accurate and exhaustive investigation. There is no surer method of getting at the real originating cause of typhoid fever, than for every practitioner to feel that it is his duty to trace every case of this specific disease to a specific cause, and not to halt at the first foul dung-heap, privy or well; to believe that the "poison" is not an impalpable, invisible, etherial something, begotten of doubtful parentage, and under mysterious influences of air and earth, but a particle which the microscope must reveal, and which is subject to ascertained chemical, physical, or biological laws. But it must, at the same time, be remembered that he is seeking for the truth; that his theory is but a fine-spun thread, which reason, like an invisible Ariadne, unwinds before him, to guide him through the obscure labyrinth into open sunlight; and, that all hypotheses are but empty vaporings, which may condense to the hard, clear crystal of positive knowledge, or be dissipated into thinnest air. Above all, he must be able to say, in the words of an old scientist to the bigots, who could not reconcile their theology with the revolution of the earth, "It is not necessary, my friends, for our hypotheses to be true in the absolute sense in which your dogmas are held to be true; for it is quite enough for us if we can reconcile theory with observation."

THE General Medical Council of Great Britain report that, while the practice of medicine presents many special difficulties for women which cannot be safely disregarded, they are not prepared to say that they should be excluded from the profession, but believe that their education ought always to be conducted in separate schools, though the course of education and examination should not in any respect differ from that of men.

Clinic.

A COMPLICATED CASE OF VESICO-VAGINAL FISTULA—SIX OPERATIONS—CURE.

BY WM. TOD HELMUTH, M.D.

THE case that I am about to report is one that occurred to me some years since, and one which is interesting, not only on account of the fortitude of the poor woman, who cheerfully underwent the several painful procedures, but because of the complicated nature of the case, the malposition of the parts, and the results which finally were attained. I first saw the patient in June, 1862. She was aged 30 years, and was to look at, a specimen of health. Having placed her on the table and separating the thighs, a round, bright scarlet mass, about the size of a plum, could be seen projecting from the vulva; upon inserting the finger, or a speculum, and pressing up the mass, (which could easily be done,) the instrument went upward into a cavity and could apparently be swept round in vacancy. No trace of the uterus could be found. The thighs were excoriated and the *odor urinae* was very perceptible. The fistula, through which the bladder protruded and prolapsed beyond the labia majora, was a true vesico vaginal one, and was nearly two inches in length, it was transverse, and would admit a speculum with ease. The rent had been occasioned by instruments, and the anterior wall of the vagina had dropped over the os uteri and grown to the posterior wall of the canal, thus effectually shutting in the os uteri. The urine constantly dribbled away, the rent being so large that no amount could be retained. Just before I saw her, she had menstruated vicariously through the rectum, the discharge being accompanied with excessive pain. Otherwise she was in a healthy condition.

Dec. 22d. I attempted to close the fistula, first however having separated sufficiently the walls of the vagina (which had grown together) to make a good flap. The edges were pared in the presence of several physicians and the ordinary assistants of the hospital. Three silver sutures were introduced and closed with perforated shot. The sides of the fistula were approximated, the woman placed upon her back, a Sims' catheter introduced and allowed to remain.

Dec. 23. No urine from the wound, and patient doing very well.

Dec. 24th. Two sutures cut out.

Christmas Day. Patient as bad as ever.

Jan. 1st. I again attempted the closure of the fistula by dissecting back much more of the adhered sides of the vagina, and having made quite a large flap, carefully pared both the anterior and posterior lips of the fistula, and passed silk sutures through the posterior lip first. To these threads I attached No. 3 annealed silver wire, and by making traction on the silk, drew the wire through the fistula, allowing eight or ten inches to extend both above and below the fistulous orifice. To the posterior ends of the wire I then fixed a leaden bar, and by drawing the anterior ends downward, the bar was made to press firmly on the posterior edges of the fistula, just above its pared margin. Taking then another bar of lead in which I had previously perforated three holes, I passed the ends of the wire through these openings and pressed back the bar to the anterior lip of the orifice.

It will be seen that in so doing, the fistula was closed entirely. To fasten this latter bar I passed perforated shot along the wires to the bar, and by making pressure upon these shot, with an instrument made for the purpose, the whole fistula was closed. In other words, I made the clamp bar suture of Sims.

This operation took me nearly three hours.

The patient was then given $\frac{1}{4}$ grain of morphine to allay any irritation, and more particularly to keep the bowels quiet; was placed upon her back, and a Sims' self-retaining catheter placed in the bladder.

After the operation, the patient complained of excessive pain in the bladder, and the nurse was obliged to withdraw the catheter, which was clogged with coagulated blood, and to introduce an ordinary female instrument—about half a pint of bloody water was drawn.

6 P. M. Six hours after the operation, pulse 130; great sensitiveness in region of bladder. Nothing passed through the catheter. I ordered an injection into the bladder of warm calendula water, and shortly after this, half a pint of clots were voided with some tenesmus, and great relief.

2 o'clock A. M. Again excessive pain in the bladder; another injection was given with great relief to the patient. No urine from the wound.

Jan. 2d. Bloody urine passed continually from the bladder, a warm injection again given.

Ordered R. *Acon.* 3.-gtt. v; *Aquæ font* \mathfrak{z} ij., a table-spoonful every three hours.

Pulse 130, flushed face, great soreness in the vesical region. Ordered another injection to be given and a solution calendula to be applied per vaginam to the cut surfaces. No urine from the wound.

Jan. 3d. Pulse 110; soreness still continued, and a good deal of blood from the bladder.

Ordered R. *Calendula* off tinc. \mathfrak{z} . *Aquæ font* \mathfrak{z} i, made warm and injected into the bladder, and cold applied to the wound. Internally I ordered No. 1. R. *Acon.* 2d, gtt. xv. *Aquæ* \mathfrak{z} ijj, and No. 2. R. *Arnica* tinc. gtt. xv. *Aquæ* \mathfrak{z} ijj, M.

In alternation a table-spoonful every two hours. No urine through the fistula.

Jan. 4th. Clear urine was passing through the catheter. She complained of a burning sensation in the wound. Pulse 90, tongue clean, appetite better; ceased internal medicine, kept the calendula solution to the parts. No urine through the fistula.

Jan 5th. The patient felt well; urine passing freely through the catheter. No urine through the fistula.

Jan. 6th. Doing well, but a slight dribbling occasionally from the vagina, showing that a part of the orifice was open. I examined the sutures carefully and found them *in situ*.

January 7th. Still some urine from vagina. Touched the edges of the wound lightly with caustic.

Jan. 8th. Not so much urine from the wound as there was on the 7th. Again cauterized the fistula, and inserted one of Mason's sponge tents into the vagina, that, by its expansion, it might have a tendency to keep the parts in apposition.

Jan. 9th. When I called at the hospital, she showed nearly a pint of urine that had remained in the bladder during the night, and which had been passed through the urethra, although a portion had escaped behind. I examined the parts as carefully as I was able, although when the speculum (Sims') was inserted, could not make much traction upon the perineum for fear of tearing apart the edges of the fistula. (It must here be remembered that I had dissected up sufficient of the anterior wall to make a flap for the passage of the wires). It was evident that a part of the opening was being healed by second intention.

Jan. 10th. Made another examination; more urine escaping from the wound, which was rather discouraging.

Jan. 11th. Urine from the vagina. Upon thinking over the matter, I thought perhaps the sutures were allowed to remain too long, or that sufficient flap had not been dissected up.

Jan. 12th. Removed the sutures without much difficulty; clamps were somewhat corroded. Ordered her to be kept in Sims' position, and that a catheter be kept all the time in the bladder.

Jan. 13th. But little urine from the vagina in the night, although some came from the catheter. Complained of burning in the region of the wound when the bladder filled. This was occasioned by tenderness at the closed end of the fistula.

Jan. 14th. Not much urine escaping and a part of the wound closing by granulation.

Jan. 15th. Fistula more open, and more urine from behind.

Jan. 17th. I was unable to visit the hospital on the 16th on account of press of outside professional business. She was up and around the room a little; she retained the water in her bladder for one hour while sitting; when she felt the vesica filling, she could reach the vessel before it was evacuated.

She expressed herself as much more comfortable. The excoriations of the vulva and thighs had disappeared, and the parts were in quite a healthy condition.

The fistula was about half healed, leaving an aperture on the right side, tolerably high up. This success, to my mind, presented the greatest encouragement. When I looked over and compared the records of cases of this kind, I felt that so far something had been accomplished, and that perhaps more might yet be anticipated.

Jan. 31st. The condition of the patient was as before, she could retain her water about an hour. After a mature deliberation in this case, I believed that the anterior wall of the vagina must first be, if possible, separated from the posterior wall entirely to the os, that the canal must be opened to the os tunc. depth, and that the parts then kept asunder must be allowed to heal perfectly, otherwise if the dissection was made, and the fistula closed, as the wound of the vagina healed, the contraction necessarily would draw asunder the lips of the fistula.

Feb. 23d. *Fourth operation.* Placed the patient on her elbows and knees, inserted the large extremity of a *Sims' speculum*, gave it to an assistant, and raised the margin of the flap, after which I turned the patient on her back, and opened the vagina to the os uteri. This operation took some time, was accompanied by considerable pain, and was attended with a good deal of hemorrhage. I had to constantly keep one finger into the rectum, although sometimes I was obliged to withdraw it and pass it into the fistulous orifice into the bladder, to keep back the prolapsed portion.

After the operation, a glass speculum of small size was passed into the vagina. This was allowed to remain 30 days, only being removed twice daily, and the parts thoroughly cleaned.

March 23d. *Fifth operation.* I again pared the edges of the fistula, and brought them together with silver wire, perforated shot and leaden bars.

March 24th. Urine passing well through the catheter.

April 2d. The urine remained about two and a-half hours in the bladder, she passed it through the natural passage, excepting a few drops that passed behind.

April 5th. I removed the sutures, and fistula was all healed, except a space one-eighth of an inch; she retained her water from two hours and a-half to three hours.

April 7th. *Sixth operation.* Patient was placed in Sims' position; I pared the edges carefully, and this time used as a suture, the button of Bozeman, together with the clamp of Sims; had a good deal of hemorrhage.

April 8th. There had been considerable hemorrhage into the bladder during the night, the catheter had to be removed, and the bladder injected with calendula water to allay the pain, etc.

April 9th. I was sent for in great haste. There had been a tremendous hemorrhage both from bladder, uterus and vagina. The patient was entirely pulseless; syncope with great pallor, no color in lips, etc. It was a question whether to remove suture or not; however, I prescribed,

R. <i>Secale cor. tinc.</i> ,	-	gtt. xx.
<i>Aquæ font.</i>	-	℥iv.
	et	
<i>Sabina tinct.</i>	-	gtt. x.
<i>Aquæ</i>	-	℥iv.

A table spoonful every 10 minutes; after a few doses the flow began to cease; the medicines were then administered every 30 minutes.

At 6 P. M. Bloody water through the catheter. Symptoms better; medicines were given in alternation every two hours. This is the second time that I have had the opportunity of witnessing the rapid effects of these two medicines in this form of hemorrhage, which I believe was mostly from the newly opened uterus, and partly from the separation of mucous membrane of the bladder.

April 10th. No urine from the vagina; bloody water through the catheter.

April 12th. Much better; no urine from vagina.

April 13th. Slept all night, and the water retained; when she arose it passed naturally through the urethra.

April 14th. No urine from the vagina, all passing through the urethra, but a peculiarity existed in that she had not the power to prevent its passing through the urethra after holding it two hours.

April 19th. No water from the vagina, but was passing all through the urethra.

April 20th. No urine from the vagina. I made a careful examination, and the parts appeared healed and in apposition. She held her water for three hours, and then could retain it long enough to reach the vessel before it passed through the urethra.

This was a satisfactory result after a long series of trials. Had I known as much then as now, the entire flap should have been dissected up, the vaginal canal entirely opened, and the parts allowed to heal and contract before other operations were resorted to, "*Experientia docet, etc.*" I might say that afterward she menstruated regularly.

▲ APOPLEXY.

BY C. L. NICHOLS, M. D.

(Staff Physician, Ward's Island Hom. Hospital.)

JANUARY 25th. Bernard Walters, born in Holland, 55 years of age, night-watchman.—Patient has always been a healthy, and although very fleshy, (240 lbs.) an active man; was a sailor for many years, and never had any severe sickness until May last. Without warning, he was seized with a slight apoplectic stroke, but recovered in a few hours. On July 5th, he had another attack, which was very severe, rendering him unable to

talk plainly for fifteen days, and leaving him paralyzed on the right side of his body. In two months, however, he was able to resume his work as night-watchman.

January 1. He had a slight attack while walking; blackness before his eyes, vertigo, loss of consciousness, etc. In the following week he had two others, attended with spasms of the left arm and limb, while the right side was motionless. In all of these attacks, the tendency was to fall backwards.

Jan. 22. When rising in the morning, he fell to the floor unable to move the right arm or limb at all. When taken to Bellevue Hospital, he was refused admission as a hopeless case, and was therefore sent to the Homœopathic Hospital on Ward's Island. When first seen, the patient was in bed, to which he had been carried, as he was unable to stand or walk alone. He seemed perfectly helpless and stupid. The right eyelid drooped, the tongue was thickly coated, (the uvula pointed to the left,) his breath was very offensive. The bowels, usually regular, were constipated, and the appetite was poor. Very restless, and complains of pain in the back and hips, numbness of hands and feet. Severe frontal headache, worse when lying down. *Nux. 3.*

Jan. 26. A little more comfortable this morning, although he was unable to sleep much. Pains are not quite so severe. Is very much troubled with profuse salivation and dreuling from the right corner of his mouth. Everything which he eats has a metallic taste. Head feels heavy this morning, but has less pain. Has had an oppressive feeling in the cardiac region for many years. Physical examination showed that the cardiac sounds were feeble but normal. Pulse, 72. Respiration, normal.

Jan. 28. Appetite getting a little better. Patient is able to stand alone, and to walk when supported on each side. *R. nux. 3.*

Jan. 31. Feels very restless; unable to sleep or sit still. Frequent micturition; passing little urine at a time. The profuse salivation and dreuling are very troublesome; also the heavy feeling in his head. Has a numb, dead feeling in both limbs. *R. nux. 3.*

Feb. 2. Feels better; slept three or four hours. Less heaviness in the head, and the numbness is confined to the left lower limb. The dreuling has almost ceased. *R. nux. 3.*

Feb. 5. Able to walk forwards, but feels like falling back when standing still. Numbness confined to the sole of the left foot. Tips of the first and middle fingers have a spot about the size of a bean, livid white in color. *R. nux. 3.*

Feb. 8. Walks about alone, and has no unpleasant symptoms, except the slight numbness in his left foot. Was discharged.

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"A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements, and OUGHT to be the ONLY ACKNOWLEDGED RIGHT of an individual to the exercise and honors of his profession."—Code of Medical Ethics, Amer. Med. Ass., Art. IV., Sec. 1.

YOUTH AND AGE.

PONCE DE LEON visited the new world hoping to find somewhere bubbling up amid its golden sands, that fabled fountain of youth whose waters possessed the charm of bringing back the vigor and strength of manhood, and the beauty of youth to forms bowed with age, and faces wrinkled with toil and care. He failed to realize that this fountain need not be sought for in foreign lands, but that each man has the power to cause it to bubble up, fresh and sparkling, within his soul, keeping bright and fragrant the flowers of youth, even though the limbs totter with weakness, and time scatters thickly its frosts upon the head. The man who lives the life God intended him to live, never grows old. He may have passed beyond the three-score years and ten usually allotted to man's life, but, if he look back upon a pathway of conscientious, honest, unselfish toil, memory brings no sad and chilling reproach. Life may not have been all sunshine; dark clouds may have swept across his sky, and the breath of the storm may have chilled his soul, but if, in this retrospect, when busy memory summons up from all along life's pathway its pictures, there come no haunting scene of duties unperformed, of opportunities neglected, of talents wasted; but if, instead, the thought comes up, "however much I have fallen

short, I have tried to do my duty, I have tried not to live in vain;" the fountain of youth still sparkles in the soul. Years cannot freeze or dry up its waters, but it flows on fresh and bright, until it loses itself in the crystal stream which flows fast by the throne of God.

It is a mistake that severe, and even long protracted mental labor, is in itself sufficient to wear out the brain and exhaust the vital powers. History is full of instances where the best works have been performed late in life. *Humboldt* retained the wonderful faculties of his mind, and his immense power for mental labor, even in extreme old age. The current of his thoughts was as smooth and fresh at eighty as in early life. *Thiers*, when president of the French republic, at a time when mental vigor, quickness of thought, and promptness of decision were of more importance than at almost any period of the nation's history, proved equal to the task, and notwithstanding his eighty years, was one of the best rulers who ever held the helm of state in that restless nation. You forgot, in listening to Lord Palmerston's brilliant wit and wonderful flow of thought, that reckoned by years, he was an old man; and are filled with admiration at the Earl Derby, at a period of life when we are accustomed to look upon men as old, turning, as a rest to his mind after the wearying cares of state, to his almost matchless translation of Homer. Bryant, in his old age, gives us poems and translations of the old Greek poets, unsurpassed by any work of his busy life. Gov. Dix proves one of the ablest statesmen in the nation, notwithstanding his more than three-score and ten years; and A. T. Stewart, the wealthiest and most successful merchant in the world, still retains all his youthful love for the classics and belles-lettres. These men never allowed themselves to run in a single rut. Their minds were always kept fresh by the wide range of their thoughts and the care of their physical health. They kept up with the times, and while they grasped the great problems of state, relished

with a keen appreciation the song, the opera, the last new book, and each step forward in the scientific world.

A few days since a large number of physicians in this city called to pay their respects and offer their congratulations to Dr. John F. Gray and Dr. Lewis Hallock, on the fiftieth anniversary of their entrance into the medical profession. There are not two men in our profession in the city who have performed a greater amount of arduous and successful professional work than Drs. Gray and Hallock; and yet, notwithstanding their fifty years of hard professional labor, there was not one among the throng who called to pay their respects younger in thought, younger in feeling, or with a keener appreciation for every thing beautiful in art, literature and science, or new in the profession, than these two men. There is nothing old about them, excepting the case which holds the soul, but which cannot fetter its brightness. Talk with them, and you are amazed at their wonderful stores of knowledge—not alone of their profession, but of the various departments of literature and science. Dr. Gray, almost with the early dawn, is refreshing his mind for the active duties of the day, with the Latin classics, and with the choice morsels of German and English literature, while in the afternoon, the man who will beat him at the billiard table, must have a steady hand and a correct eye. If Dr. Hallock has an enemy in the profession, we have never yet heard of him. Notwithstanding his ripe experience, he is as kind and courteous to the youngest practitioner as to his peers in age and practical knowledge. Such men never grow old. Children love to cluster around them, as though they felt that these men, catching almost the sunny light and warmth of that eternal youth from the not distant shore, are in more senses than one, kindred spirits. The young man just entering the profession, should remember that the fountain of eternal youth, if ever found, must form a part of his inner life, and spring from his own soul.

TO OUR SUBSCRIBERS.

IN the history of Medical Journalism, it rarely happens that a periodical meets with success during the first years of its existence. There are generally so many obstacles to encounter; so many uncertain conditions to be grappled with; so many tastes to please; so many opposing journals, and so many competitors for public favor in the same line, that success (particularly *pecuniary success*;) is rarely, if ever obtained, except after years of toil and fluctuations. We are glad to inform our patrons that the "HOMŒOPATHIC TIMES" shows on its balance sheet a preponderance of dollars and cents on the right side of the account, and that the prospects for the future appear encouraging indeed. We hope this Journal is a "*fixed fact*." Our great object however is, at present, to obtain a more diffuse circulation; we desire to send this paper *everywhere*; and we hope, in extending the circulation, that we shall also be able to increase the usefulness of the periodical. We therefore offer the following

INDUCEMENTS:

We will present to every new subscriber to the TIMES, the two volumes of *The N. Y. Journal of Homœopathy*, or the two volumes of the *Medical Union*, whichever the subscriber may elect. Either of these volumes (the subscription price of which, per annum, was three dollars,) will be mailed, on the receipt of three dollars subscription to the TIMES, and fifty cents for mailage of the volumes. Thus it will be seen that each new subscriber will have the opportunity of receiving complete sets of either of the journals, which will soon be entirely out of print, and both of which contain many valuable articles not to be found elsewhere in our literature.

We also desire that those physicians who receive the HOMŒOPATHIC TIMES, and have not paid their subscriptions, will do so at once; and that those *who do not wish to receive it*, will immediately *re-mail the present number*, with their name, to our office, 18 West 23d Street.

In conclusion, let us beg our brothers in the cause of homœopathy, to aid us with their pens; let THEM endeavor to make the position of this Journal, as a literary production, as high as that of any other in this country. This could easily be accomplished, if a few of our best men would not set their lights under a bushel, but upon a candle-stick, and *that candle-stick* should be "THE HOMŒOPATHIC TIMES."

Our periodical exchanges with the very best old and new-school journals, and we are anxious that, in comparison with them, it should not suffer.

Give us your aid with both pen and purse, and let the HOMŒOPATHIC TIMES be upon your table for constant perusal and reference.

HOMŒOPATHY vs. ALLOPATHY.

The following is a letter from Dr. J. B. Tuttle, late physician to the State prison at Jackson, Michigan.

In October, 1859, the authorities of the Michigan State Prison, taking the lead of all similar institutions in the United States, first adopted the homœopathic treatment in the prison hospital. Thinking it may be useful and interesting to the profession and the public, to know something of its success during the years in which I was in charge, I will give a summary of the comparative results, which are to be found recorded in the Annual Prison Reports. Taking then first, the facts for three years under each medical system, we have the following result:

	Average No. of Convicts per Annum.	Total No. of Deaths.	Total No. of days labor lost.	Total Cost of Hospital Stores.
Under Allopathic treatment in '57, '58 and '59.....	435	39	23,000	\$1,678
Under Homœopathic treatment in 1860-'61 and '62,	545	20	10,000	\$500

This improvement was obtained, notwithstanding I had to contend during the years 1861-2, with epidemics of small-pox, of which there were thirty-two cases; of measles, of which there were thirty cases; and of cholera of which there were forty-four cases. Many of these latter were of a very severe type; but all were successfully treated and speedily cured by infinitesimal doses, and without any resort to any kind of "heroic medication." And here I may remark that the success of the homœopathic treatment was so great, that

many of its opponents attempted to account for it in other than the right and legitimate way. They affirmed that the good health of the inmates of the prison was owing entirely to the abundant supply of pure artesian water which had been introduced a short time previous to my appointment. But they failed to see that the water lost its efficacy soon after the homœopathic practice was abandoned, and that it did not regain its virtues until that system was again adopted in 1872; all which may be seen, by referring to the prison reports for the next ten years, when allopathy was "in," and homœopathy was "out." Taking another and later comparison, we find that, in round numbers:

	Days labor lost by sickness.	Cost of Hospital Stores.
Under Allopathic treatment in 1870 and 1871.....	24,000	\$1,800
Under Homœopathic treatment in 1873 and 1874....	11,000	\$900

While the average number of convicts during the last two years was greater than ever before in the history of the prison. I have omitted the year 1872, because my attendance began in the middle of the year, and I wish to compare only full years. Thus it will be clearly seen that homœopathy is far in advance of the ordinary method of practice in saving life, in abbreviating suffering or in diminishing expense. The people of Michigan, in looking over these facts as contained in the prison reports, cannot fail to perceive the great advantage of the new practice; and yet it is well known, that, in obedience to partisan prejudice and political pressure, an allopathic physician has lately been placed over these unfortunates, who costs the tax-payers of the State larger sums of money, and who keeps the prisoners upon beds of sickness many days in the year when they ought to be at work. And thus, in spite of demonstrated facts, this institution is managed without due regard to the best interests of the State, in either an economical or humanitarian point of view.

J. B. TUTTLE, M.D.

Jackson, Mich. February, 1876.

VIVISECTION.

THE following interesting paragraph is taken from the foreign correspondence of the New York Times. It will be seen that vivisection has stood the test of examination, and is, when properly executed, necessary to the advancement of medical discovery.

THE QUESTION OF VIVISECTION.—The report of the Royal Commission on Vivisection has just come out, and will give a great shock to the humanitarians who have been disseminating such dreadful stories, and trying to work on sentimental feelings by every kind of exaggeration and spasmodic agitation. The commission included such men as Lord Cardwell, Mr. W.

L. Foster, Mr. R. Hutton, the editor of the *Spectator*, and formerly a prominent denouncer of vivisection, and who cannot for a moment be suspected of any sympathy with cruelty, and it is, therefore, highly satisfactory to find that they have come to the conclusion that the use of animals for experiments is not by any means so cruel and reckless as has been alleged. They point out that the whole history of medicine is full of examples of benefits to humanity derived from such experiments; as, for instance, Harvey's discovery of the circulation of the blood, the discovery of the action of the lacteal and lymphatic systems of vessels, and the discovery of the compound function of the spinal nerves. At present, investigations are going on, some under the auspices of the Government, with regard to cholera, consumption, pyæmia, typhoid fever, sheep-pox, snake-bite, and the use of disinfectants, which may result in the diminution, or possibly even the removal, of some of the severest scourges which afflict the human race. The Secretary of the Royal Society for the Prevention of Cruelty to Animals has now acknowledged that he does not know of a single case of wanton cruelty, and the Commissioners themselves report that a general sentiment of humanity on this subject appears to pervade all classes in the country. They therefore deprecate the making unlawful any experiment whatever made for the advancement of science, on the ground that the germ of a great discovery is often so small as to be scarcely perceptible at first. They also hold that demonstrations in medical schools are necessary and legitimate, if performed under anesthetics. The Commissioners, however, think it desirable to place vivisectional experiments under supervision, by means of a system of licensing and registration by the Home Secretary of all persons engaged in such operations, and the appointment of an inspector. Taken altogether, this report will probably not satisfy extreme views on either side. The humanitarians will call for the entire suppression of such experiments, and the experimenters will resent the registration and inspection. But moderate persons will admit that it hits the happy medium.

Medical Annotations.

PAINLESS OPENING OF ABSCESSSES.—Dr. Ergonozini uses a solution of two parts of carbolic acid with one part of glycerine, and leaves the mixture in contact with the skin for three or five minutes. Redness or swelling never occurs, except the skin had been previously inflamed, or the liquid allowed to remain on too long. This anæsthetic agent might, according to the author, be used in autoplasmic operations, and he intends to try it in neuralgia, where the seat of the pain is very superficial.—*Lancet*.

ULCERATED NIPPLES.—M. Legroux (*Annales de Gynécologie*, Nov., 1875,) advises the following treatment: Spread with a camel-hair brush a layer of elastic collodion around the nipple, in a radius of an inch or more;

a piece of gold-beater's skin should then be placed over the nipple and the collodion, taking care to make a few holes with a pin over the part of the gold-beaters' skin which covers the nipple, so as to allow the milk to ooze through. No collodion should be spread on the nipple itself, as some pain might thereby be occasioned. By the rapid evaporation of the ether, the collodion dries up, and the gold-beaters' skin adheres. The nipple is more or less pressed down by the latter, which in drying becomes tense. When the child is to be nursed, the end of the nipple should be wetted with a little water. The gold-beaters' skin which covers it becomes soft and supple, allows the nipple to swell, and protects the ulcers and fissures from the strain of suction. The mother or wet-nurse thus suffers no pain, and the ulcers heal in a few days.

THE ANTIDOTES OF STRYCHNINE.—At a meeting of the Society of Therapeutics, of Paris, M. Constantine Paul said that the treatment of poisoning by strychnine should fulfil three indications: 1. Cause the patient to reject all the poison if possible, or at least whatever has not yet been absorbed. 2. Administer harmless substances, which may render the poison inert, viz.: in most cases, insoluble. 3. Treat the symptoms of poisoning. These three indications are carried out by evacuates, antidotes and antagonists. Among the evacuates, the author dwelt especially on apomorphine as likely to give good results. As to antidotes, they are principally iodine and tannin. M. Bouchardat, in respect of iodine, has given the following formula: Iodine, ten grains; distilled water, about one ounce and a-half; iodide of potassium, about twenty grains for solution. It requires about one drachm of this solution to precipitate one grain of strychnine. This precipitate is, however, not harmless, and should be as soon as possible evacuated.—*Lancet*.

A NEW FORM OF ARTIFICIAL MEMBRANA TYMPANI.—In treating cases of perforation of the membrana tympani, it has always appeared remarkable that some patients should derive benefit from Gearsley's pellet of moistened cotton-wool, while others gain greater advantage from Toynbee's artificial membrane. It has, therefore, occurred to me that the instrument I am about to describe might prove advantageous; and such I have found to be the case. It is simply a combination of Toynbee's artificial membrane, viz., a thin disc of india-rubber, mounted on a fine silver-wire stem, and Gearsley's cotton-wool. In my instrument the wire is carried beyond the india-rubber for about a quarter of an-inch, and terminates in a second disc, made of flannel. The space between the two is filled up with a small portion of Dr. Von Brun's wound dressing cotton-wool, which is absorbent, and so takes up and communicates to the flannel disc any medicated solution which it may be desirable to apply. To prevent overcharging the cotton-wool, a pipette should be used, as one or two drops are sufficient to moisten every fibre of the wool and flannel. Its advantages are the following: 1. It does not irritate the membrane, and being very soft, is not likely to injure it. 2. It is made of cotton-wool, which is absorbent;

lotions can by this means be constantly applied with much advantage. 3. By thus keeping the part clean, the membrane gets into a healthy state, and the perforation heals. 4. The hearing distance is improved. 5. It is not liable to leave the india-rubber disc in the meatus. 6. It is easily used; and does not require the forceps, as is the case with Yearsley's cotton-wool.—*British Medical Journal*.

ON GELSEMINUM SEMPERVIRENS IN THE TREATMENT OF ODONTALGIA.—*Gelsemium sempervirens*, the yellow jasmine, or woodbine, belonging to the natural family apocynaceæ, grows plentifully in the Southern States of North America. The root, the part used in medicine, is sent to England cut up in small pieces, and these are of a brownish color externally, of a grayish color on section, from half an inch to two inches in length, and of about a quarter of an inch in thickness. Several fatal cases of poisoning by *gelsemium* have been recorded. Death seems to arise from asphyxia, resulting from paralysis of the respiratory muscles. The drug appears to act mainly upon the nervous system, impairing the sensibility of the sensory nerves. The dose of the powder of the root is from one to two grains. I have always used the tincture prepared according to the following formula, for which I am indebted to Dr. Dewson. Take of the *gelsemin* root, in coarse powder, two ounces; of rectified spirits, twenty fluid ounces. Moisten the powdered root with two ounces of the spirit, and allow the mixture to stand for twenty-four hours. At the end of that time, pack in a percolator, and add the remaining ten ounces of spirit. When the fluid has ceased to flow, remove the contents of the percolator, and press them. Add the pressed liquid to that obtained by percolation, filter, and make up with rectified spirit to a pint. Eleven minims of the tincture are equal to about one grain of the root. The tincture contains only a trace of tannin, and may be given with any of the preparations of iron. I have rarely found *gelsemium* fail to give decided and lasting relief in cases of neuralgic pains in the face and jaws, associated with carious teeth. I have usually given fifteen minims of the tincture every six hours.—*Practitioner*.

A NOVEL TREATMENT OF OBSTINATE VOMITING IN PREGNANCY.—On December 21st, 1868, I was called to see the wife of Captain M., who had just returned from a sea voyage around Cape Horn; she was thirty-one years of age, and seven months gone in her fourth pregnancy; naturally strong and robust, but now much reduced by incessant vomiting. The usual remedies, *hydrocyanic acid*, *soda* and *calumba*, and the *nitrate of cerium*, were prescribed for a few days, to allay the gastric irritation, without the least effect, and not the smallest quantity of nourishment, (such as milk and lime water) could be retained. On the 24th, her condition became so precarious, that I suggested premature delivery; and, on consultation with another practitioner, this view being concurred in by the gentleman called in, I proceeded to the induction of premature labor by means of Barnes's bags, having first dilated the os as much as possible by the finger. When I saw

her the same day I found her condition much improved, having retained the medicine and some nourishment; I therefore removed the bag, and refrained from further interference for the present. About 5 A.M., on the following morning, I was sent for in a great hurry, and found she had been delivered by spontaneous expulsion, of a male child, which only survived a short time. On inquiry, I found she had slept tolerably well during the night, and was aroused from her sleep by a slight pain, and found that the child was born immediately afterwards. She made a rapid recovery, and was out of bed in about a fortnight. I was struck at the time at the sudden cessation of the vomiting and her general improvement, which I attributed at the time to the means employed to allay gastric irritation; but I am now led to think, with Dr. Copeman, that probably the urgent symptoms were due to undue tension, and that the introduction of the bags into the os uteri may have been the immediate cause of relief. It is certain that, after the introduction of the bag, there was little or no vomiting. I am led to think that this was a case of vomiting due entirely to the pregnant state, and not to the combined effects of sea sickness and the vomiting of pregnancy, from the fact that this lady had been in the habit of going to sea with her husband, and was never much troubled with sea sickness, and was subsequently confined at sea with a healthy child, about a week before her arrival at Antwerp, the vessel having been longer on her passage than was expected. Both mother and child did well. In conclusion I would remark, that I have found the *nitrate of cerium* (as recommended by the late Sir J. Simpson,) most beneficial in the vomiting of pregnancy.—*British Medical Journal*.

SIR HENRY THOMPSON, in his lectures at the University College Hospital, on the functions of the male urethra, says, in regard to the commonly accepted belief, that the urethra is simply a tube, and more or less open, "First, let me assure you that the urethra is not a tube at all, in any sense in which we employ that word. It is not like a gas pipe, or an india-rubber tube, or even a flaccid tube of any membrane whatever. It is rather a continuous closed valve, capable of transmitting fluids and solids in one direction only, and transmitting nothing whatever in the opposite direction, except in obedience to applied force. Its length in the male makes us think of it as a tube, but this is a mere accident of sex. An inch or less is amply long enough for its urinary function, as in the female; and all the length it possesses above that is quite useless as a urethra, and renders it liable to disease and accident—the price, and a heavy one, let me tell you, which the male pays for his specially distinguishing feature. In illustration of this, I have but to refer you to the innumerable difficulties and dangers associated with stricture, retention of urine, and calculus, which are almost unknown in the other sex. It is, then, in the male a long valvular chink, traversing soft and most delicate vascular and nervous tissues, always firmly closed, and never opening except for a few seconds, during which fluids have to be transmitted

from the body. Then, for a few seconds, it is distended more or less, and becomes a tube if you please, for this short time, and this only, equalling, perhaps, at most three minutes in the twenty-four hours. All the rest of the time it is firmly closed, and not one drop of fluid can pass from the bladder. Of course, oozing of liquid, which is generated in the walls of the tube, or which enters it by ducts, may escape, but always, inevitably, in the outward direction only." The above facts are of interest as affecting two important points in practice. *First*, The simple matter of making an injection into the urethra; *Second*, Our treatment of urethral stricture. It is of the first of these procedures that the present lecture treats. In order to introduce a fluid into the urethra it must be distended, and some little force is necessary; not a single drop can enter, much less run down into it, unless the liquid is forced into it by a piston, while the orifice of the urethra is carefully closed around the tube of the syringe introduced. The walls of the passage lying closely applied to each other, become open only by the pressure of the fluid driven in, and they are distended just so much and so far as the quantity employed determines. Thus it is stated as a safe conclusion, that a syringe, containing one fluid drachm, is amply sufficient, and that it will distend the urethra for three and a-half or four inches. Caution is enjoined in the performance of this simple operation, lest no fluid at all enters the urethra, for unless the orifice is carefully closed at the time around the end of the syringe, such will be the result. The lecturer continues to say, that so far from being able, even with the power of the syringe, to send an injection into the prostatic portion of the urethra, it cannot be accomplished by any ordinary force unless at the same time, the muscles which surround the membranous urethra are voluntarily relaxed, thus allowing the fluid to pass, a thing perfectly possible, with very little practice to accomplish. Thus it is, that the bladder cannot be injected except by passing an instrument into its cavity. In fact, this valvular passage stoutly resists all intrusion from without, and admits no fluid except in obedience to pressure, which it is unable to resist.

MEDICAL SHAMS.

IN Professor Helmuth's Valedictory to the class of the Hahnemann Institute, after the enumeration of many points to be considered by the young practitioner, the following occurs:

"Above all, gentlemen, let me say to you, in the practice of your profession, avoid being a sham. There are shams all over the world, they are found in all professions and trades; in the law, the ministry, and in medicine; but a sham doctor is about the worst specimen of humanity that can possibly exist. He knows—or *says* he knows, everything. No case of interest can be

reported to him, but *he* has seen many similar ones. No cure, however grand, can be produced, that *he* has not seen those of more magnitude. No operation in surgery, however splendid a success in performance, can be related, that cannot be surpassed by *him*. He stands wrapt in his pompous egotism, making loud-mouthed praises or condemnations of those things he never can, or never will understand. He has his '*bed-side manners*' cultivated to a nicety. He has his looks of sympathy educated to perfection, and drawn over a cold and unfeeling heart. He has his articles in the medical journals plagiarized from those of other and of better men. He never praises anybody in fair round terms, though he criticizes every act of a professional brother with the most severe scrutiny. He sets fire to a professional reputation, and hides behind another. In fact, his life is a sham from beginning to end. He deprives himself of all comfort, and while his conscience is lashing him to a fury, he smiles upon the being he would devour if he dare. Don't be a sham."

HOSPITAL DIRECTORY.

[For the benefit of those physicians in our own and neighboring cities, who are not acquainted with the public institutions under the immediate management of the homœopathic school in this city and Brooklyn, we publish a directory, giving such facts as may be of interest relating to their location, directions for obtaining admissions for patients, etc.]

HOMŒOPATHIC HOSPITAL, Ward's Island, Selden H. Talcott, M. D., chief of staff. Physicians should obtain blank applications for admitting patients from the Commissioners of Public Charities and Corrections, Third avenue and Eleventh street, and be sure when filling them out to *distinctly* mark them for *this* institution. All applications must be approved by Mr. Kellock, at the office of the commissioners.

NEW YORK MEDICAL COLLEGE AND HOSPITAL FOR WOMEN, 301 Lexington avenue, corner of Thirty-seventh street.—Patients received at all hours, a limited number of whom may be charity.

HAHNEMANN HOSPITAL, G. M. Dillow, M. D., resident physician, 213 West Fifty-fourth street. Patients received at all hours.

BROOKLYN HOMŒOPATHIC HOSPITAL, Cumberland street, between Myrtle and Park aves. S. E. Stiles, resident physician.

BROOKLYN HOMŒOPATHIC LYING-IN ASYLUM, 88 Lawrence street, Brooklyn, F. S. Abbott, M. D., resident physician; medical director, A. E. Sumner, M. D.

REPORTS OF HOSPITALS AND DISPENSARIES.

CENSUS REPORT OF HOM. HOSPITAL, WARD'S ISLAND.—For February, 1876. No. of patients remaining Jan. 31st.—Males, 288; females, 50. Admitted to Feb. 29th.—Males, 134; females, 42; births, 1; making a total of 515 patients. Discharged to Feb. 29th.—Males, 98; females, 19. Deaths during same period, 10 males, 4 females. No. remaining in hospital, Feb. 29th, 1876.—Males, 315; females, 69. A total of 384.

BROOKLYN HOM. HOSPITAL, Feb. 29th, 1876. S. E. Stiles, M.D., Resident Surgeon, 109 Cumberland street.—Number of new patients, 21; patients remaining under treatment, 43. No deaths.

BROOKLYN HOMŒOPATHIC HOSPITAL DISPENSARY, F. L. Radcliffe, M. D., Medical Director. Month ending February 29th, 1876: Number of new patients, 349; of whom 332 were medical, and 17 surgical. Number of prescriptions, 661. Vaccinations, 8. Number of visits made, 50.

BROOKLYN HOMŒOPATHIC DISPENSARY, J. M. Browne, M. D., resident physician. Month ending February 29th, 1876: Number of new patients, 496. Number of prescriptions, 749.

N. Y. OPHTHALMIC HOSPITAL, corner Third avenue and Twenty-third street, Alfred Wanstall, M. D., resident surgeon. Report for the month ending February 29th, 1876: Number of prescriptions, 2,438. Number of new patients, 268. Patients resident in the hospital, 35. Average daily attendance, 102. Largest daily attendance, 166.

WESTERN HOMŒOPATHIC DISPENSARY, 403 West Forty-second street. Report for month ending February 29th, 1876: Number of patients treated, 616. Number of prescriptions, 1,555. Number of patients visited, 70. Number of visits made, 213.

COLLEGE COMMENCEMENTS.

THE annual commencement exercises of the New York Medical College and Hospital for Women, was held at Steinway Hall, Tuesday

evening, April 4th. The graduating class numbered four members. Their names were Mrs. Ella M. Barrett, N. Y.; Miss Jenette Caldwell, Pa.; Miss Louise Gerrard, N. Y.; Miss Caroline E. Manning, N. Y.

THE Hahnemann Medical College, Philadelphia.—The commencement exercises of this established school took place March 9th. The graduating class numbered fifty-three members. The first prize, gold medal, was awarded to George S. Adams, Mass.; second prize, silver medal, to Francis T. Burek, Md.; third prize, bronze medal, to Frank A. Bishop, N. Y. Prof. Thomas' prize, for best dissection, a case of surgical instruments, to Horace C. Griffith, Pa. A special degree was conferred on Dr. Frederick Bruns, Athol, Mass.; and the honorary degree of the institution upon Constantine Hering, M. D., John F. Gray, M. D., N. Y., and Dr. Joshua M. Colwell, Shortland, New Zealand.

SEVENTEENTH annual commencement of the Homœopathic Medical College of Missouri. Fourteen gentlemen received diplomas from this institution on the evening of February 17th ult. Dr. J. M. Kershaw delivered the valedictory on the part of the college faculty.

THE annual commencement and reception of the N. Y. Ophthalmic Hospital was held in the hospital building, Thursday evening, March 9th. An address was delivered by Hon. Frederick A. Conkling. Five students received their degrees in ophthalmic and aural surgery. Their names are given as follows: Thomas Wildes, M. D., N. Y. City; Moses T. Runnels, Indianapolis, Ind.; Emma B. Ryder, M. D., San Francisco, Cal.; Eugene B. Squier, M. D., Syracuse, N. Y.; and Walter E. Deuel, M. D., Frankfort, N. Y. After the exercises were over, refreshments were provided by the trustees of the institution, and dancing was enjoyed by a happy company, still later, in the large hall below.

OUR old friend, Dr. Watson, of Utica, has been trying his hand at president-making. At a political meeting in that city, he made an eloquent and stirring speech in favor of his fellow-townsmen, Hon. Roscoe Conkling, for the next President of the United States. If Dr. Watson is as correct in his presidential prognosis as in his medical opinions, Mr. Conkling's chances for the White House are good.

Correspondence.

THE GRADED COURSE SYSTEM IN OUR MEDICAL COLLEGES.

To the Editors of the *Homœopathic Times*.

WHEN the American Institute of Homœopathy recommended a three years' graded course to our medical colleges throughout the country, the idea was, that by extension of time, the medical student might acquire a more thorough knowledge of the *essential branches* of medical science. It was thought that eighteen months or two years was not a sufficient time in which to acquire a medical education, and that in such a brief space but a smattering of the different branches could be obtained. It appears that many of our colleges have misunderstood the meaning of the Institute and of the graded-course system, and instead of making each department of lectures more *thorough and practical*, have instituted a variety of new professorships, have established all kinds of specialties and outside lectureships, and their annual circulars present such a number of teachers, and variety of subjects to be taught, that a really thoughtful student may well stand appalled at what is before him. The result will be—(we may go farther, and put it in the present tense,) the result *is*, this: That at the end of the terms, the student, instead of being well grounded in those studies which are of most value to him at the outset of his professional life, finds that he has been hurried through an array of collateral medical topics, which are *not at all essential*; that he has a confused idea of many things, and *little precise knowledge* in any branch. He finds that he is expected to pass an examination in all these branches, and that at the final ballot of the professors, (acting on the supposition that they all stand on an equal footing,) the vote for proficiency in medical jurisprudence, (for instance,) which is of no practical import to the majority of medical men, can *actually counter-balance the vote given by the professor of practice*, which is of immense importance.

A medical student, a good, hard-working practical man, aware of the value that therapeutics will be to him, gives it much time, passes a good examination therein, gains a high merit for his proficiency, and is liable to be over-thrown by a low mark given him in psychology or ophthalmic

surgery, or some outside collateral. The fact is, there are too many lectures on too great a variety of subjects crammed into the curriculum of our institutions; too many outside specialties are attempted, and the result is, as a rule, that the student, even after a three years course of study, has a *less definite idea of the really valuable branches*, than he would have acquired from an attendance upon an old-fashioned medical college, with two courses of lectures, and a faculty of seven or eight professors.

We need not go further than to look at our colleges in Boston and this city. The array of professors and lecturers is startling. In the New York College there are no less than fourteen professors, and seven lecturers and adjuncts; in Boston the number is greater. Now, we contend, that ophthalmic medicine and surgery, psychological medicine, medical jurisprudence, pathological histology, dermatology, and even gynecology, are not the *essentials* for the student of medicine. Although it must be acknowledged that they are possessed of the greatest necessity to those who *desire to become specialists*, in a college course they should not be ranked with anatomy, physiology practice, materia medica, surgery, or obstetrics. What the student must have, is anatomy, taught for *practical and immediate use*; and physiology *based upon a medical foundation*. Clinical medicine and clinical surgery should accompany and illustrate the didactic teachings of these chairs. Therapeutics and materia medica should go hand in hand. Practical obstetrics and *medical chemistry* should be carefully taught, and then for a general knowledge of medicine, and especially of homœopathy, a chair of institutes (one very much neglected, and very important,) should receive a high place in the curriculum. This is enough, quite enough for the *medical student*. Men who come out from *fair examinations* in these branches, will make good doctors at the start, and often accomplished and skillful specialists as they advance in life.

The other lectureships may be carried on as before, if so desired, but need not be obligatory upon the student, nor should they be examined thereupon with a view to graduation. There might also be what is termed a Post Graduate course, as is already established in several medical colleges, for the benefit of those desiring to make themselves conversant with specialties.

What medical student, what graduate, nay, what professor in our medical colleges could satisfactorily pass the examinations that are expected of the medical student? Where is the physician in general practice who could give satisfactory answers even to the ordinary questions in ophthalmic surgery, medical jurisprudence, histology normal and pathological; psychology and gynecology? In attempting to do too much, the colleges will over-reach themselves, and the end for which the graded course has been established will be defeated and destroyed.

The science of medicine, to-day, embraces so large a field, that it is absolute nonsense to endeavor to impart, even a smattering of its tenth part, to students in three, or even in six years. It is not well for the minds of the students to be so over-taxed; it is not well for the colleges to have so many branches taught in their halls; it is not well for professors to expect from their classes what they do not know themselves. The course of instruction should be three years, at least. It should consist of lectures, and especially of clinical demonstrations in those departments of medical science that are essential to the physician at the outset of his professional life. *The specialties come after—and one of them is the study of a life-time.*

MEDICUS.

To the Editors N. Y. Hom. Times.

GENTS.—I return to you, to-day, copy of the TIMES, that you may discontinue sending it to my address. I have not written upon the wrapper "not wanted," for that would be an untruth. I do want it, and shall peruse its contents with pleasure at the rooms of the Medical Journal Club, of which I am a member. I should also subscribe for it for my office table, but I cannot afford it.

[We have received, during the past few months, several letters similar to the above. The reasons given for not taking the TIMES are certainly good and substantial. We hope the original and clinical articles, and the medical and scientific news which the TIMES gives from month to month, will make it of sufficient value to deserve a place as a bound volume in the library of every physician in our school. We suggest to those of our medical friends who can afford the trifling expense, that, independent of present reading, which of course can be had at the "Medical

Journal Club," the TIMES has a more permanent value for future reference. If a medical journal is needed in our community, each physician should ask the question "How can it live unless by the pecuniary support of the majority of the profession at home?" The editors cannot be expected not only to collect the material, and send it out properly arranged, but to defray the expenses of publication also.]

Bibliographical.

HOMŒOPATHY IN ITS RELATION TO THE DISEASES OF FEMALES. By Thomas Skinner, M. D., Liverpool.

Less than two years ago Dr. Skinner was ranked among the leading gynecologists of the allopathic school in England; now he places himself among the most radical of homœopaths, and to explain his remarkable change in medical belief, he sends out this interesting little pamphlet. Educated in Edinburgh, a pupil of, and afterwards an assistant to Sir James Y. Simpson, he imbibed from this medical luminary of the time all his opinions in regard to the investigations of medical science, and accepted them as conclusive. It is not, therefore, surprising that he entertained feelings of the utmost contempt for the doctrines of Hahnemann and its followers. Indeed, it is more surprising that he ever had his eyes opened to the light, as he now sees it, and had it not been for the unmistakably curative effects of homœopathic remedies applied in his own person, when all allopathy had signally failed, probably they never would have been.

The story of his conversion, the cures which he now effects more rapidly and permanently than ever before, without the aid of pessary, or local application of any sort, (except warm water and cleanliness,) with cases illustrating his method, are all related in the most pleasing manner, and with a candor and uprightness which is exceedingly refreshing. The pamphlet will repay every physician for a careful perusal, and it should also receive a circulation among the laity, to whom it is partly addressed. Copies can be procured of W. E. Hering, 112 North Twelfth street, Phila., at the rate of \$2.00 per dozen, or 25 cents for single copies.

A MANUAL OF GENERAL PATHOLOGY, for the use of students and practitioners of medicine, by Ernst Wagner, M. D., Professor of General Pathology in the University of Leipzig. New York: William Ward & Co., 1876.

We have long needed a concise and practical work on general pathology, in which a thorough *résumé* of the elements of medicine are given, with the matter so arranged as to be available for both the student and practitioner. Until this volume appeared, we have had no extensive work of the kind, but have been obliged to hunt through a library of books, at great expense of time and labor, for the information which we here find so admirably arranged, that we can turn to it at once.

The work is divided into four parts, and each part subdivided into those divisions necessary for a full and intelligent discussion of the subject.

Part first is devoted to general nosology. *Part second*, to general ætology. *Part third*, to general pathological anatomy and physiology. *Part fourth*, to pathology of the blood.

A large list of authorities are given under each head, so that the reader can easily turn to any special treatise which he may wish to consult. The work will prove a valuable addition to every medical library, but more especially to the hard-worked surgeon and physician, who needs a work of ready reference.

SOME REMARKS ON THE MICROSCOPICAL STRUCTURE OF LYCOPODIUM SPORULES.

BY MR. F. C. THOMPSON.

THE appearance of the fine dusty sporules of lycopodium in mass is well known to all pharmacists, being extensively used as a harmless covering for pills, also as a puff powder on account of its extreme fineness; and on the Continent not unfrequently as a producer of artificial fire, from the quality it possesses of flaring up when ignited.

It has often struck me as a very anomalous and unexplained fact that the remedial virtues of the lycopodium sporules should be entirely ignored by the large dominant school of medicine, while by the smaller, but perhaps not less enlightened, body of homœopathic practitioners, lycopodium has from the commencement proved one of their most cherished remedies.

It was with a wish to solve if possible this incongruity that I have recently made a series of experiments with the aid of the microscope. A crude examination of lycopodium in the microscope, with a one-inch objective, shows it to be composed of an infinite number of minute hard straw-colored particles, each about $\frac{1}{100}$ of an inch in diameter. Upon applying a quarter or one-fifth objective, these little particles will be seen to possess a definite regular form, each particle being a hard nut, rounded on one side, converging in triangular lines, with flattened sides, to an apex on the other side, and the whole surface covered with rounded knobs.

After pounding a small portion for a considerable time in a Wedgwood mortar, examination showed the nuts not to be perceptibly altered or fractured; but on repeating the process with a very minute quantity of the sporules in an agate mortar and pestle, many of the nuts were found to be completely fractured and their contents dispersed. Conjecturing that the contents of the nut, whatever its nature, contained the vital medicinal element of the lycopodium, the broken sporules, with the addition of a drop of water, were put under the microscope, when a large number of unmistakable oil-globules were at once visible.

A similar experiment to the last was next made, but with the addition of *ether* to the ground sporules in place of water, the result being as anticipated that no oil-globules were visible, being absorbed by the *ether*.

These experiments seem to prove conclusively that, as in the case of many seeds, the hard-cased sporules of the lycopodium are filled with a peculiar oil. If then, as surmised, it is to the action of this oil upon the system that the medicinal virtues of lycopodium are to be ascribed, the apparent inconsistency respecting it between the two systems of medicine is at once explained,—the nutty sporules as administered in their unaltered form by the adherents of the old school probably passing through the system without any assimilation having taken place; while, on the other hand, the homœopaths have by trituration and subsequent attenuation extracted the oil, and administered it in a form easily assimilable with the tissues of the body.

Having investigated thus far the true physical nature of the remedy, there remains to be determined the best means of most thoroughly

extracting this oily matter, and the most suitable menstruum and form for its preparation and administration.

To this end six months ago I prepared a series of mixtures (which are on the table before you,) of the following fluids with a given quantity of the lycopodium sporules, viz., alcohol (absolute, rectified, 20 O. P., and proof,) distilled water, glycerine and ether, and heated each (the glycerine solution excepted,) to boiling point for a few minutes. Upon then examining them under the microscope, no alteration in the form of the sporules was perceptible in any of the solutions, and now after six months I think you will see that, with the single exception of the etherial preparation, in which a large proportion of the sporules are swelled out and broken, none of the solutions appear to have produced any visible change in the appearance of the sporules.

[Mr. Thompson here exhibited the different solutions, showing a drop of each under the microscope, (one-fifth objective) confirming the above statement.]

As all of you are aware, the *British Homœopathic Pharmacopœia* recommends that lycopodium should be prepared in trituration; and, no doubt, the good results accruing from lycopodium (so frequently administered in the higher attenuations) are owing to the long-continued triturating process of the hard sugar crystals upon the shells of the sporules, fracturing many of them, the milk sugar absorbing the contents.

But I was not a little surprised to find on microscopically examining the lower triturations how few comparatively of the sporules were broken, the greater number of them having escaped fracture altogether, lying about among the sugar crystals quite uninjured.

[The 1^x trituration was then exhibited in a drop of water under the microscope, showing the entire sporules lying about amongst the sugar of milk crystals.]

The first centesimal trituration did not yield very much more satisfactory results; for, upon examining a little of it in a drop of water with the one-fifth objective as before, the separate sporules were still seen in many cases clustered together in small masses, a large number not being at all injured.

On examining the second and third centesimal triturations, however, it was found that the triturating process had thoroughly succeeded, for all

the sporules appeared to be completely broken, and numbers of oil-globules were floating about in the water.

The experiments upon these triturations of lycopodium were entirely confirmed by examining samples of the same triturations procured from other homœopathic chemists, all yielding precisely similar results.

Subsequently I have been at some pains to practically ascertain if it be possible to prepare a proper 1^x trituration of lycopodium. It is not to be attained by making it according to the allotted time in the *Pharmacopœia*; but I find that if a small quantity (not more than 500 grains) be very well triturated for two hours, the 1^x trituration so prepared will, on microscopic examination with the one-fifth objective, show all the sporules to be thoroughly crushed. The first centesimal and higher triturations made up from this will be found to be intimately mixed, and minute subdivision completely accomplished.

It thus becomes evident that a very considerable amount of trituration is essential in order to thoroughly break the outer cuticle of the lycopodium sporules, and so to free the inside contents; the trituration form, therefore, certainly appears to be the best method of preparing and administering the drug in its lower attenuations. If made at all as a strong tincture, the previous experiments conclusively show that ether and not alcohol should be the vehicle used.

In this series of experiments I have merely endeavored to make good a theory that will reconcile opposite statements respecting the therapeutic value of a particular substance. In so doing I would not be so presumptuous as to say that in no case will the lycopodium sporules, if taken in their ordinary form, affect the system either curatively or otherwise. This lies within the province of the medical practitioner to determine, and exactly opposite statements on the point have been made, the allopaths, as before stated, being satisfied in discarding lycopodium altogether from their *Pharmacopœia* as worthless.

With us, as disciples of Hahnemann, lycopodium ever holds a high place, owing, I believe, to our having (whether consciously or not,) extracted from it by prolonged trituration a virtue unknown to those with whom quantity is an indispensable adjunct to success in treatment.

Note by Dr. Drysdale.—With the above paper

Mr. I. Thompson sent to me for examination five slides, on which were mounted specimens of the pure sporules of lycopodium, the first decimal trituration in two forms, the first and the second centesimal triturations. I examined these under the one-fourth objective, and counted the broken and whole sporules in twelve fields of each slide. The average result was that in the first decimal trituration, made according to the directions of *Pharmacopœia*, there were nine unbroken to one broken. And besides these twelve fields containing spores, there were several met with where there were crystals of milk-sugar and no spores at all, showing the irregularity of their distribution; which was also shown by the fact that in those containing whole and broken spores the numbers taken together varied from fifty-six to twenty.

In the first centesimal trituration, prepared according to the *Pharmacopœia*, there were in the twelve fields nine broken and eleven whole spores in all: the maximum in any field was four, i. e., three whole and one broken; and the minimum one, whole or broken.

In the second centesimal trituration there were no whole spores, and we found a few fragments sufficiently large to distinguish them as parts of a spore.

As a contrast to these results there were found, in the first decimal trituration for two hours in small quantity, hardly one or two whole spores in the slide; and no comparison could be instituted, as the broken ones were in such small fragments.

The value of effectual trituration is thus evident, and I hope the same tests will be applied to other insoluble substances.—*British Journal of Homœopathy*, January, 1876.

Medical Items and News.

N. Y. COUNTY HOM. MEDICAL SOCIETY.—Meeting March 8th, 1876. Dr. S. Lilienthal read a paper on puerperal insanity. Dr. Selden H. Talcott read several clinical reports, which were enthusiastically received. Dr. C. E. Blumenthal read a very interesting clinical paper on *eupatorium* and *jaborandi* in the epidemic influenzas. Dr. Dunham made some statements in regard to the World's Homœopathic Convention. T. F. Smith, A. P. Throop, and J. S. Linsley were

appointed a committee on co-operation to raise money for the convention on the part of the society. Dr. Lilienthal announced the death of Samuel B. Barlow, M. D. Drs. Lilienthal, Berghaus and Joslin were appointed a committee on resolutions.

APPOINTMENTS.—Dr. Arthur T. Hills has been appointed Curator of the Ward's Island Homœopathic Hospital, *vice* J. B. Gilbert, M. D., resigned. Dr. Geo. S. Norton has been appointed surgeon to the N. Y. Ophthalmic Hospital, and Dr. F. H. Boynton as assistant surgeon to Dr. T. F. Allen, in same institution.

CORRECTION.—In the clinical note by Dr. G. E. Tytler, published in the March number of the *TIMES*, p. 276, the author is made to say, "delirium arrested in two days." It should have read *delirium completely arrested after second dose*, the medicine being given hourly.

MR. CHARLES E. BOYLE has been appointed an externe in the Ward's Island Homœopathic Hospital.

FOR SALE—A Partnership in a large Practice in Brooklyn. Applicants must have from \$2,000 to \$5,000 at their immediate disposal, and must have had some experience in general practice. Address, stating age, qualifications, etc., and enclosing photograph, which will be returned. P. H. Y., Brooklyn P. O.

JOEL D. MADDEN, M. D., (formerly of the Homœopathic Hospital, Ward's Island, is desirous of entering into PARTNERSHIP with an established Physician. New York or Brooklyn preferred. Address, care S. H. Talcott, M. D., Chief of Staff, Homœopathic Hospital, Ward's Island.

NOTICE.—Physicians who are about to subscribe for the HOMŒOPATHIC TIMES, or who have already subscribed and have not remitted for the same, are requested to have their postal orders made payable to L. L. DANFORTH, Treas.

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